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REMARKS

In the Office Action dated September 22, 2004, claims 1-17 are pending. Claims 1, 10, 12, and 17 are independent claims from which all other claims depend therefrom. Claims 1-5, 7-13, and 16-17 have been amended. Claims 18-21 are newly added.

Claims 2-9, 11, and 13-16 stand objected to for informality reasons. The Office Action states that "A" in line 1 of each of the stated claims should be a "The". Applicants submit that there is no "A" in any of the stated claims, but rather that there is an "An". Applicants also submit that each of the dependent claims 2-9, 11, and 13-16 are capable of standing on there own recitation and include each of the limitations recited in the corresponding base claim. For example, each apparatus recited in dependent claims 2-9 are separate from, are different, and do not have antecedent basis in the apparatus of claim 1, although they include the limitations recited in claim 1. Thus, the use of the term "An" is appropriate in claims 2-9, 11, and 13-16.

Claims 1-17 stand rejected under 102(b) as being anticipated by Klostermann (USPN 4,811,375).

Amended claims 1, 10, and 12 have similar limitations and are therefore described together. Claim 1 recites a filament circuit resistance adjusting apparatus for a filament circuit having a filament with a first resistance. The apparatus includes a first nonhard-wired and removable resistor that is electrically coupled to the filament and has a second resistance. The nonhard-wired and removable resistor adjusts the system perceived resistance of the filament. Claim 10 recites a filament resistance adjusting apparatus and includes all of the limitations of claim 1 except for the limitation of adjusting the system perceived resistance. Claim 10 further recites electrically coupling the nonhard-wired and removable resistor in series with the filament. Claim 12 recites an imaging tube assembly and includes all of the limitations of claim 1.

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The apparatuses of claims 1, 10, and 12 in utilizing a nonhard-wired and removable resistor allow for the easy replacement thereof and for the adjustment of the filament circuit resistance. This minimizes the need for the development and manufacturing of a new imaging tube and allows for increased versatility of an existing imaging tube. Also, the ability to easily replace the resistor provides increased range of resistors or resistances that may be utilized over that provided by the use of a hard-wired resistance device, such as a resistor, a potentiometer, and a variable resistor, or the like. Although a potentiometers and variable resistors have a range of resistance, the range is limited.

Klostermann discloses an x-ray tube having a cathode filament 82 that receives power through a transformer 124. An associated preheat resistor 122 is in series with the transformer and is used to preheat the cathode filament 82.

The Office Action states that the resistor 122 adjusts the resistance of a filament circuit. The resistor 122 does not alter the system perceived resistance of the cathode filament 82, but rather simply is used in controlling the amount of current needed to preheat the cathode filament 82. Notice that the resistor 122 is not used in the operation of the cathode filament 82. The resistor 122 is also not in series with the cathode filament 82.

Applicants submit that Klostermann fails to teach or suggest the use of a nonhard-wired and removable resistor, the electrical coupling of a nonhard-wired and removable resistor to a filament, the electrical coupling of a nonhard-wired and removable resistor in series with a filament, and the using of a nonhard-wired and removable resistor to adjust the system perceived resistance of a filament. The resistors of Klostermann are merely shown as being electrically coupled within a circuit. There is no mention of how the resistors are coupled. Klostermann does not teach or suggest using resistors that are not hard-wired and easily removable, in other words and for example, not soldered or permanently attached. Thus, Klostermann clearly does not teach or suggest

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using nonhard-wired and removable resistors to alter the system perceived resistance of a filament.

In order for a reference to anticipate a claim the reference must teach or suggest each and every element of that claim, see MPEP 2131 and *Verdegrad Bros. V. Union Oil Co. of California*, 814 F.2d 628. Thus, since each and every element of amended claims 1, 10, and 12 are not taught or suggested by Klostermann, Applicants submit that claims 1, 10, and 12 are novel, nonobvious, and are in a condition for allowance.

Amended claim 17 recites a method of adjusting the resistance of a filament circuit and includes directly and electrically coupling a first nonhard-wired and removable resistance device, having a second resistance, to the filament. The resistance device is coupled such that the system perceived resistance of the filament is altered. The first nonhard-wired and removable resistance device is unplugged from the filament circuit. A second nonhard-wired and removable resistance device is plugged-in to replace the first nonhard-wired and removable resistance device.

Again as with claims 1, 10, and 12, Klostermann fails to teach or suggest the use of nonhard-wired and removable resistance device, thus Klostermann fails to teach or suggest any of the limitations of claim 17. Therefore, claim 17 is also novel, nonobvious, and is in a condition for allowance.

Since claims 2-9, 11, 13-16, and 18-21 depend from claims 1, 10, 12, and 17, respectively, they are also novel, nonobvious, and are in a condition for allowance for at least the same reasons. Some additional reasons are provided below with respect to claims 6, 9, 13-14, and 18-21.

With respect to claim 6, the Office Action states that Klostermann discloses a circuit board having a heat sink layer and refers to the second end wall 29 of Klostermann. The second end wall 29 is a structural component of the x-ray tube 10. The second end wall is not a layer of a circuit board. Applicants submit that no circuit board is mentioned, disclosed, taught, or suggested in Klostermann.

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For argument sake, even if a circuit board were inherent, it is not inherent that the circuit board have a heat sink layer or that a heat sink be coupled to a circuit board. The heat sink layer as claimed is used to transfer heat away from resistors. The second end wall 29 is used to transfer heat out of the x-ray tube 10. Also, in general, heat sinks are utilized throughout industry. However, heat sinks have not been utilized to remove heat from a circuit board having a nonhard-wired and removable resistance device, as claimed, for a filament of an x-ray tube.

With respect to claims 9, 14, 19, and 20, Klostermann fails to teach or suggest a circuit board that is configured to plug into a socket and a socket configured for receiving a circuit board. Applicants are unable to find the use of any sockets within Klostermann.

With respect to claims 13, 18, and 21, Klostermann also fails to teach or suggest the use of a filament circuit resistance adjusting apparatus or for that matter a circuit board that is configured to reside within a recessed portion of an imaging tube encasement. This configuration allows for the circuit board and any resistors thereon to be maintained as part of the imaging tube assembly and to be translocated with the imaging tube as a single assembly. The resistors, such as resistor 122, of Klostermann do not reside within any portion of, are not attached to, and are not part of the imaging tube 10. The resistors of Klostermann are part of a separate control circuit for the imaging tube 10 and are coupled to the cathode 81 of the imaging tube 10 via a cathode cable 15.

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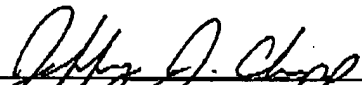
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In light of the amendments and remarks, Applicants submit that all of the objections and rejections are now overcome. The Applicants have added no new matter to the application by these amendments. The application is now in condition for allowance and expeditious notice thereof is earnestly solicited. Should the Examiner have any questions or comments, he is respectfully requested to call the undersigned attorney.

Respectfully submitted,

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Dated: October 21, 2004